GAME MACHINE, GAME SYSTEM, AND GAME PROGRAM

TECHNICAL FIELD OF THE INVENTION

The present invention relates to a game machine, a game system, and a game program that

5   records a display region at which a predetermined symbol is statically displayed and that uses the

recorded position information to determine whether there is a fixed relationship in the position

history of the predetermined symbol.

BACKGROUND OF THE INVENTION

10   Game machines with a sub-screen in addition to a main screen have been known.   The

sub-screen is independent from the game display in the main screen and displays bonus games and

the like based on game results from the main screen.   In this type of game machine, the bonus game

or the like on the sub-screen is associated with the game on the main screen.

U.S. Patent No. 5,393,057 discloses a conventional game machine.   While this type of

15   game machine may involve spinning a slot-machine on the sub-screen when the main screen shows a

certain card combination, no detailed associations are provided.   Thus, there is no attempt to take

advantage of the ability to use the main screen at the same time as the sub-screen, and the use of two

screens does not provide adequately heightened gameplay.   Game machines in which the sub-screen

records the display history of the main screen have not been known, but would be able to improve

20   gameplay.   Also, a need exists for a game machine that uses two games to synergistically improve

gameplay and provoke the player's interest.

The object of the present invention is to overcome these problems and to provide a game

machine, a game system, and a game program that uses the display history of the main screen for the

sub-screen to provoke the player's curiosity and heighten the player's anticipation.

SUMMARY OF THE INVENTION

In order to achieve these objects, the game machine of the present invention includes a display module with a plurality of display regions wherein, when a game starts, a plurality of types of symbols that were statically displayed in the display regions are displayed so that they continuously change into different types of symbols, and the symbols displayed in a changing manner are again statically displayed in the display regions. The game machine includes: a recording module recording information about a position of a display region in the display module in which a predetermined symbol is statically displayed each time the predetermined symbol is statically displayed in one of the display regions of the display module while the changing display operation and the static display operation are repeated; and an evaluation module evaluating whether a fixed relationship is formed in a position history of the predetermined symbols based on the recorded position information.

In this manner, in the present invention when the predetermined symbol is statically displayed, the position information for the display region in which the predetermined symbol is displayed is recorded. Then the predetermined symbol position history, accumulated based on the recorded position information, is evaluated to see if there is a fixed relationship. More specifically, two inter-related games are provided: a game where wins are established from position information determined directly from the changing display and the static display of the symbols; and a game where wins are established from the position history of the static display of a predetermined symbol accumulated through a series of changing displays and static displays of symbols.

As a result, the player becomes interested not only in the direct wins established from a single game (starting with the changing display of symbols and ending with the static display) but also in wins established based on the position history of the static display of the predetermined

symbol recorded over a series of games. Furthermore, there is a synergistic increase in the player's interest with each game (from changing display to static display). For example, the player anticipates the static display of the predetermined symbol at the particular display region at which a win, based on the position history, is established if the predetermined symbol is statically displayed at that position. As a result, there is a synergistic improvement in game play, and there also is increased interest on the part of the player.

According to another aspect, the present invention provides a state advantageous to a player if the position history contains a fixed relationship, i.e., the player is awarded a prize.

In this manner, the present invention provides an advantageous state for the player if a fixed relation is found in the position history of the predetermined symbol. For example, if the position history of the predetermined symbol forms a predetermined arrangement, the payout value can be varied according to the arrangement. As a result, a high value can be awarded to the player in a game based on this position history, thus increasing the player's interest and anticipation regarding the game based on this position history.

According to another aspect, the present invention further includes a dependent display module including a plurality of dependent display regions arranged in a one-to-one correspondence with the display regions of the display module. The dependent display module displays the predetermined symbol position history based on the recorded position information on the dependent display regions corresponding to the display regions on which the predetermined symbol was displayed statically.

In this manner, the game machine of the present invention is equipped with a dependent display module having a plurality of dependent display regions arranged in a one-to-one correspondence with the display regions of the display module. The position history of the predetermined symbol is displayed on the dependent display regions in correspondence with the

display regions where the predetermined symbols have been statically displayed.

As a result, the position history for the predetermined symbol is clearly displayed, and the player can be continuously aware of the position history of the predetermined symbol displayed on the display module. This allows the game state to be easily understood. Also, the player can more easily concentrate on particular display region at which a win, based on the position history, is established if the predetermined symbol is statically displayed at that position at the next static display, making it easier to anticipate a static display of the predetermined symbol there. In this manner, the display on the dependent display module can further provoke the player's interest.

According to another aspect, in the game machine of the present invention, each of the dependent display regions is formed as a polygon. A state advantageous to the player is provided if a plurality of dependent display regions displaying the predetermined symbol position history is adjacent to each other, separated by a polygonal side.

In this manner, each dependent display region is formed as a polygon, and the dependent display module is organized as a collection of uniformly arranged polygons. As a result, various types of adjacency for the predetermined symbol position history is possible, e.g., six directions for hexagons, four directions for squares, thus increasing the player's interest. Also, the player recognizes the arrangement of dependent display regions displaying the position history of the predetermined symbol more easily, thus further increasing the player's interest in the game based on the predetermined symbol position history.

Also, the present invention provides a state advantageous to the player if a win line is established when dependent display regions are adjacent to each other, separated by polygonal sides. Compared to a fixed relationship where the dependent display regions are dispersed, this allows the player to more easily recognize structures that provide a state that is advantageous to the player. As a result, the player's interest in this game, where wins are based on the predetermined symbol

position history, is increased further.

According to another aspect of the present invention, each of the display regions is formed as a polygon. A state advantageous to the player is provided if a plurality of display regions displaying at least one type of symbol in the display module is adjacent to each other separated by a polygonal side.

In this manner, each display region is formed as a polygon, and the display module is organized as a collection of uniformly arranged polygons. As a result, various types of adjacency are possible even for games directly provided through the display module, thus increasing the player's interest. Also, the player more easily recognizes the arrangement of multiple display regions statically displaying at least one type of symbol, thus further increasing the player's interest in the game where wins are based on symbol positions. Also, the present invention provides a state advantageous to the player if a win line is established when display regions are adjacent to each other, separated by polygonal sides. Compared to a fixed relationship where the display regions are dispersed, this allows the player to more easily recognize structures that provide a state that is advantageous to the player. As a result, the player's interest in this game, where wins are based on the predetermined symbol position history, is increased further.

According to another aspect, the game system of the present invention includes: a plurality of game machines; and a shared display module including a plurality of shared display regions arranged in a one-to-one correspondence with display regions of display modules of the game machines and displaying a position history of the predetermined symbol based on position information recorded by the game machines on the shared display regions corresponding to the display regions at which the predetermined symbol was statically displayed. The game machines and the shared display module are connected by way of network communications.

In this manner, in the game system of the present invention, the game machines and the

shared display module are connected by network communication. This allows data to be shared by the game machines and allows various features to be provided for games. In one possible example, accumulated position history for a predetermined symbol already displayed in the shared display module is saved. Then, in a feature game (a game, also referred to as a bonus game, different from

5   a general, normal game that can involve, for example, increasing the player's win rate or increasing payout) of one game machine, if a fixed relationship is formed in the predetermined symbol position history of the shared display module, a jackpot payout is won. This allows the player's interest and anticipation regarding this game based on the position history to be increased. Also, the shared display module includes a plurality of shared display regions arranged in a one-to-one

10 correspondence with the display regions of the display modules of each game machine, and the position history of the predetermined symbol recorded at each game machine is displayed in the shared display regions corresponding to the display regions at which the predetermined symbol was statically displayed. As a result, the game players of the game machines can recognize the accumulated predetermined symbol position history through the shared display module, thus

15 increasing the player's anticipation regarding the next feature game.

According to another aspect, in the game system of the present invention, a state advantageous to the player is provided if at least one of the shared display regions displaying the predetermined symbol position history is positioned on a predetermined alignment line.

As described above, in a system using a network and capable of various functions, a state

20 advantageous to the player is provided when at least one shared display region displaying the position history of the predetermined symbol is positioned on a predetermined alignment line. As a result, the game has a higher value for the player, and the player's interest and anticipation are increased.

According to another aspect, in the game system of the present invention, the display regions

in the display module and the shared display regions in the shared display module are formed as polygons. A state advantageous to the player is provided when a predetermined number of shared display regions displaying the predetermined symbol position history are adjacent to each other, separated by a polygonal side.

As described above, in a system using a network and capable of various functions, the display regions and the shared display regions are formed as polygons, and the shared display module is a collection of uniformly arranged polygonal regions. As a result, the arrangement of shared display regions displaying the predetermined symbol position history can be easily recognized by the player, and the player's interest in the game based on the predetermined symbol position history is increased. Also, in the present invention, a state advantageous to the player is provided when a win line is established by dependent display regions adjacent to each other, separated by a polygonal side. As a result, the player can easily recognize arrangements for which a state advantageous to the player is provided, thus increasing the player's interest in the game.

According to another aspect, the present invention provides a game program for controlling a game machine including a display module with a plurality of display regions wherein, when a game starts, a plurality of types of symbols that were statically displayed in the display regions are displayed so that they continuously change into different types of symbols, and the symbols displayed in a changing manner are again statically displayed in the display regions. The game program is formed in a computer-readable form to execute a series of operations including: a changing display operation wherein, when a game starting condition is established, a plurality of types of symbols that were statically displayed in the display regions are displayed so that they continuously change into different types of symbols; a static display operation restoring to a static display state the symbols in the display regions being displayed in the changing state; an information recording operation recording information about a position of a display region in the display module

in which a predetermined symbol is statically displayed each time the predetermined symbol is statically displayed in one of the display regions of the display module while the changing display operation and the static display operation are repeated; and an evaluation operation evaluating whether a position history of the predetermined symbol based on the recorded position information

5   contains a fixed relationship.

As described above, if the predetermined symbol is statically displayed, the position information for the display region at which the predetermined symbol is statically displayed is recorded. The records of this position information are accumulated over repeated sessions of changing and static displaying of symbols. Then, the position history of the predetermined symbol

10   accumulated based on the recorded position information is evaluated to determined if there is a fixed relationship. More specifically, two inter-related games are established: a game in which wins are established from position information directly based on the changing and static display of symbols; and a game in which wins are established based on the predetermined symbol position history accumulated over a series of changing and static displays of symbols.

15   As a result, the player is interested not only in wins established directly through one session of changing and static displays of symbols, but also in wins established based on the recorded predetermined symbol position history for a series of sessions. Furthermore, the player is synergistically made interested in the changing and static displaying of symbols in each session. For example, the player can concentrate on that display region and anticipate the static display of the

20   predetermined symbol at the particular display region at which a win, based on the position history, is established if the predetermined symbol is statically displayed at that position at the next static display. As a result, game play is synergistically improved for that game, and the player's interest is further increased.

According to another aspect, in the game program of the present invention, the computer

further executes a dependent display operation for displaying the predetermined symbol position history based on the recorded position information in a plurality of dependent display regions arranged in a one-to-one correspondence with the display regions, the dependent display regions being in a dependent display module disposed at a position different from the display module.

5   As described above, in a game machine equipped with a dependent display module having dependent display regions arranged in a one-to-one correspondence with the display regions of the display module, the predetermined symbol position history based on recorded position information is displayed on the dependent display regions in correspondence with the display regions at which the predetermined symbol was statically displayed.

10   With this program, the predetermined symbol position history is clearly displayed. The player is able to continuously be aware of the position history of the predetermined symbol displayed in the display module, and the game state can be easily understood by the player.   Also, the player can easily concentrate on the particular display region at which a win, based on the position history, is established if the predetermined symbol is statically displayed at that display region in the next

15   static display, and the player tends to anticipate the static display of the predetermined symbol there. In this manner, the display on the dependent display module can further increase the player's interest.

BRIEF DESCRIPTION OF THE DRAWINGS

20   Fig. 1 is a perspective drawing showing the outer appearance of a game machine according to an embodiment of the present invention;

        Figs. 2A and 2B are block diagrams showing the electronic structure of a game machine according to the embodiment of Fig. 1;

        Fig. 3 is a flowchart showing the operations performed by a game machine according to the

embodiment of Fig. 1;

Fig. 4 is a flowchart showing the operations performed by a game machine according to the embodiment of Fig. 1;

Fig. 5 is a flowchart showing the operations performed by a game machine according to the embodiment of Fig. 1;

Fig. 6 a flowchart showing the operations performed by a game machine according to the embodiment of Fig. 1;

Fig. 7 a flowchart showing the operations performed by a game machine according to the embodiment of Fig. 1;

Fig. 8 a drawing showing a sample display of a display module;

Fig. 9 a drawing showing a sample display of a display module;

Fig. 10 is a drawing showing a sample display of a dependent display module;

Fig. 11 is a drawing showing a sample display of a dependent display module; and

Fig. 12 is a drawing showing a network architecture of a game system according to another embodiment of the present invention.

LIST OF DESIGNATORS

1: game machine; 2: case; 3a: front lower panel; 3b: front upper panel; 7: main screen; 8: sub-screen; 13: control panel; 30: CPU; 31: ROM; 32: RAM; 80: trigger symbol; 81: bonus symbol; 91: first reel; 92: second reel; 93: third reel; 94: fourth reel; 95: fifth reel; Pn: player; SLn: game machine; 99: management device; 100: shared sub-screen

DETAILED DESCRIPTION OF THE PRESENT INVENTION

EMBODIMENT OF FIGS. 1-7

A game machine according to an embodiment of the present invention will be described.   In

the game machine according to this embodiment, the operation state of the game machine changes to

a feature game when a trigger symbol is statically displayed in a display region of the main screen

serving as a display module.   Changing and static displaying of symbols is repeated in the feature

game.   The position information in the display region where a predetermined symbol is statically

displayed in the display module is recorded.   A position history for the predetermined symbol

formed from the recorded position information is evaluated to see if the history forms a fixed relation.

The position history is displayed on a dependent display module, serving as the sub-screen.   If the

position history forms a fixed (constant) relationship, a state advantageous to the player is provided,

i.e., the player is awarded a prize.

The trigger symbol has a function for changing the game machine operating state from a

normal game to the feature game.   For example, as shown in Fig. 8, a symbol 80, rendered as an

eye and surrounded by white dotted lines drawn on display regions 62, 63, and 64, serves as the

trigger symbol.   In this embodiment, the feature game is a game that takes place under a different

state from that of the normal game and refers to a series of games involving repeated static and

changing display of symbols and in which winning is established based on the position history of the

predetermined symbol.   The predetermined symbol serves as a bonus symbol.   For example, as

shown in Fig. 9, a symbol 81 rendered as a diamond in the display regions 62, 63, and 64 serves as

the predetermined symbol.

In Fig. 8 and Fig. 9, a screen display 60 on the main screen for this embodiment is shown.

Also, Fig. 10 and Fig. 11 show a screen display 61 on the sub-screen.   Each display region and

dependent display region is formed as a polygon.   In this embodiment, hexagonal shapes are used,

as shown in Fig. 8 through Fig. 11. The dependent display regions in the sub-screen are arranged so that there is a one-to-one correspondence with the display regions in the main screen.

In the normal game and the feature game, symbols are displayed in a changing manner and then are displayed statically. An evaluation is then made as to whether a diamond symbol is statically displayed. It would be possible to have multiple types of symbols, including the diamond symbol serving as the bonus symbol 81, displayed in a changing manner, and to have the symbols being displayed in a changing manner stopped based on results from an internal selection. By providing a changing display of multiple types of symbols, including the diamond symbol, and statically displaying the symbols being displayed in a changing manner based on results from an internal random selection, the present invention can be implemented for a game machine having a physical reel or a video reel. As a result, there is a heightening of the player's anticipation regarding which symbols are statically displayed, and the player's curiosity is provoked regarding whether the diamond symbol is statically displayed in a display region position that forms a fixed relationship.

The present invention can also be implemented for all devices (game devices) that can display symbols. The example in this description is a game machine in which multiple types of symbols are displayed in a changing manner along columns (rows would be possible as well) in a display region in a display module, and changingly displayed symbols are statically displayed based on results of an internal selection. The section that provides a changing display of symbols can be a mechanical reel or a video reel that provides a changing display of symbols in the form of images on a liquid crystal display or the like. In addition to game machines such as slot machines installed in pachinko halls where the player actively operates a stop button to determine the timing and sequence for stopping the reels, the present invention can be implemented for game machines where the reels automatically stop in a sequential manner regardless of the will of the player. Also, when the

dependent display regions in the dependent display module displays position histories having a one-to-one correspondence with statically displayed diamond symbols in the display regions, these displays can involve displaying on a video screen, e.g., a liquid crystal display, or can involve physical changes, e.g., a symbol jumping out.   Also, in the example presented in this embodiment, the wagered item is a coin, but the present invention is not restricted to this, and pachinko balls or any other medium that can provide game points can be used.

In Fig. 1, the game machine 1 includes a housing 2 and a front lower panel 3a and a front upper panel 3b attached to the front of the housing 2 so that they can be opened and closed.   A main screen 7 displaying, for example, five columns of symbols, is formed from a liquid crystal panel or a CRT (Cathode-Ray Tube) disposed behind the front lower panel 3a.   Also, a sub-screen 8 displaying, for example, five columns of symbols, is formed from a liquid crystal panel or a CRT (Cathode-Ray Tube) disposed behind the front upper panel 3b.   This embodiment uses video reels. A program is executed to display five columns of reels on the main screen 7.

As shown in Fig. 8 and Fig. 9, the main screen 7 includes five reels arranged as columns (vertically, in terms of the game machine) that display symbols in a changing and static manner. More specifically, the reels include: a first reel 91; a second reel 92; a third reel 93; a fourth reel 94; and a fifth reel 95.   Each reel can display different symbols in a changing manner or a static manner.

The main screen 7 displays the trigger symbol, rendered as an eye surrounded by a dotted white line, the predetermined symbol rendered as a diamond, and various other symbols.   Then, as described above, the different symbols are displayed in a changing manner in the column direction. Then, the symbols being displayed in a changing manner are displayed statically based on the results of internal selections.

Also, the main screen 7 displays a "win" line, which is enabled based on the number of

deposited coins (or the number of credits that are bet) and provides displays relating to the game, e.g., when a "win" takes place. The main screen 7 also displays the number of coins stored in a coin storing device not shown in the figures, the number of "wins" and number of remaining turns when a bonus prize is won, the number of coins for payout, and the like.

5 　　　　As shown in Fig. 10 and Fig. 11, the sub-screen 8 displays the same number of reels as the main screen 7, and each display region displays the diamond symbol 81 or a blank space. While the normal game is in progress, the sub-screen 8 displays the results of the previous feature game and stays in a stand-by state. If a feature game is won, the diamond symbol displayed on the main screen 7 is displayed on the sub-screen 8 in the display region having the corresponding position. 10 The diamond in the region of the sub-screen 8 corresponds with the region at which the diamond in the main screen 7 is displayed as a static image.

　　　　In this embodiment, a second screen serving as the sub-screen 8 is the only other screen, but it would also be possible to have other symbols besides diamonds set up as predetermined symbols, with third and fourth screens being used in association with these predetermined symbols. This can 15 provide different types of "wins" in the feature game and can increase the player's interest. It would also be possible to provide a single screen that is divided into separate display regions corresponding to the main screen 7 and the sub-screens 8.

　　　　A coin deposit opening 10 and a bill deposit opening 10a are disposed on the front surface of the housing 2. A control panel 13 is formed from: a start button for receiving input to start the 20 changing display on the main screen 7; a double-up button for changing to a double-up game when there is a "win" in the normal game; settings buttons for setting up the "win" line; a "settle accounts" button for settling accounts with regard to the stored coins; a stored coin deposit button for using coins (credits) stored in the coin storage device not shown in the figures; and a stored coin deposit button for using the maximum allowed number of coins stored in the coin storage device not shown

in the figures.

The game provided by the game machine 1 is started by having a player indicate a valid "win" line by performing a bet operation. In this embodiment, however, there can be a "win" based on the arrangement of a predetermined symbol regardless of the "win" line indicated by the player. The bet operation is performed by depositing a coin in the coin deposit opening 10 or the bill deposit opening 10a or by using a stored coin to place a bet with the stored coin deposit button. Bets can also be made by combining these bet operations.

When the player has identified a "win" line with a bet operation and the start button has been operated, symbols are displayed in a changing manner on the main screen 7. Then, once a time interval, which is set up ahead of time, has elapsed, the main screen 7 sequentially displays the changing symbols statically. The stopping sequence can be, for example, from left to right facing the main screen 7. The stopping operations can be performed, for example, separated by 0.5 second intervals.

In this embodiment, if the trigger symbol 80 is statically displayed in any one of the display regions, the game state shifts from the normal game to the feature game. When the trigger symbol 80 is displayed in any of the display regions when in the static state, a turn in the feature game is awarded for each symbol. For example, in this embodiment, if three trigger symbols 80 are displayed in three display regions 62, 63, and 64 on the main screen 7, a feature game involving three alternating changing and static displays is awarded. Position information for the display regions at which the diamond symbol 81 is statically displayed during the feature game is recorded, and this position history is displayed on the sub-screen 8. Then, an evaluation is performed to see if there was a "win" in the feature game. If, as in this case, feature game "wins" are based on the appearance of the predetermined symbol rather than on a "win" line, the player can win in a more flexible manner compared to a game in which a "win" line is set up in a fixed manner, thus

increasing the player's anticipation.

A coin payout opening 15 and a coin receiving tray 16 are disposed below the front panel 3. A bonus game display 18 is disposed on the front upper panel 3b. The bonus game display 18 provides displays for when there is a "win" or for when a bonus awarding a large number of game points to the player is won or for game enhancement displays or for errors. If a bonus is won, the game proceeds in a manner favorable for the player, e.g., the win rate becomes 1/3. Also, a label 28 displays the payout rate for the game, the type or manufacturer name of the game machine 1, or the like.

Figs. 2A and 2B show the electrical structure of a game machine according to this embodiment. As shown in Figs. 2A and 2B, electronically, the game machine 1 is formed from a main substrate A and a sub-substrate B. The main substrate A includes a CPU 30, a ROM 31, and a RAM 32 and performs control operations according to a program set up ahead of time. In addition to the control program for controlling the operations of the game machine 1, the ROM 31 includes a prize group selection table used for determining a prize group ahead of time (internal selection) and the like. The CPU 30, the ROM 31, and the RAM 32 form an evaluation module.

Also, a clock generator circuit 33 generating a reference clock pulse and a random number generator circuit 34 generating fixed random numbers are connected to the CPU 30. Control signals sent from the CPU 30 are output by way of an output port 35 to a coin payout device 36 performing coin payouts and a display control circuit 37 controlling the main screen 7 and the sub-screen 8. The main screen 7 and the display control circuit 37 form a display module and the sub-screen 8 and the display module control circuit 37 form a dependent display module.

Also, signals output from a coin evaluation device 38 evaluating whether coins are acceptable or not, from a payout coin counter 40 counting the number of coins for payout, and from a start button 41 initiating the spinning of reels are received by the CPU 30 by way of an input port

43. Signals output from the CPU 30 are controlled by a transmission timing control circuit 45 controlling the transmission timing of signals going to the sub-substrate B and are output to the sub-substrate B by way of a data transmission circuit 46.

In the sub-substrate B, signals output from the data transmission circuit 46 are received by a data input circuit 47. Signals received by the data input circuit 47 are processed by a CPU 48. The CPU 48 is connected to a clock generator circuit 49 generating a reference clock pulse, a control/image ROM 50 containing various programs and image data; and a RAM 51. Image-related data is sent from the CPU 48 to a liquid crystal display 53 by way of a display circuit 52 performing image processing and the like. The liquid crystal display 53 displays text, images, animation, and the like. Audio-related data is sent from the CPU 48 to an amplifier circuit 56 by way of a sound LSI (Large Scale Integrated Circuit) 54 performing audio processing and the like. The sound LSI 54 extracts necessary audio data from an audio ROM 55 when processing audio data. The audio data is amplified and the like by the amplifier circuit 56 and is sent to a speaker 58 by way of an audio adjustment circuit 57 performing audio adjustments.

Next will be described operations performed by the game machine according to this embodiment as described above. Fig. 3 through Fig. 7 are flowcharts indicating characteristic operations performed by the game machine according to this embodiment. Fig. 8 and Fig. 9 show sample displays of the main screen 7. Fig. 10 and Fig. 11 show sample displays of the sub-screen 8.

In Fig. 3, the game machine is in an idle state (step S1) and enters a game idle state when a coin is deposited (step S2). From this state, the player performs operations to start a normal game (step S3). In this case, the player determines a "win" line through a bet operation and operates the start button.

Next, spinning of the first through fifth reels 91 - 95 are initiated (step S4), and the spinning

of the reels 91 - 95 are stopped sequentially (step S5).   In this case, the reels 91 - 95 are stopped in sequence from the first reel 91 to the fifth reel 95, with the stopping operations separated by a predetermined interval.   The predetermined interval can be, for example, 0.5 seconds.   This causes the game results to be displayed.

First, an evaluation is performed to see if there is a "win" or not (step S6).   If there is no "win", an evaluation is made to see if there are any remaining credits (step S7).   If remaining credits are available, the game idle state is restored (step S2).   Otherwise, a game idle state is entered (step S8).   If there was no "win" at step S6, normal game "win" evaluation is performed (step S9).   If there is no "win", control proceeds to step S11 shown in Fig. 4.   If there is a "win", a normal "win" payout is made (step S10).   For example, a payout can be made if multiple display regions statically displaying at least one type of symbol are adjacent to each other (separated by a polygonal side).

Next, in Fig. 4, a feature "win" evaluation is performed (step S11).   In this embodiment, a feature "win" takes place if, as shown in Fig. 8, a trigger symbol 80 is statically displayed in any of the display regions of the display module.   If there is a feature "win", a predetermined number of feature games are played based on the number of statically displayed trigger symbols 80.   For example, it is possible to have 10 games played if there are 3 statically displayed trigger symbols, 15 games for 4, and 25 for 5.   In this kind of set-up with this embodiment, if three trigger symbols are statically displayed at the display regions 62, 63, 64 as shown in Fig. 8, then a feature "win" is established and 10 feature games are played.   The number of feature games does not have to be based on the number of trigger symbols as described above, but can instead be based on the number of coins that were bet by the player in the normal game, the "win" line that was set up, or the like. These arrangements increase the interest the player has in playing the feature game.

Referring to Fig. 5, if there is a feature "win", a feature game standby state is entered (step

S12). When entering this standby state, the previous game result history is erased. In this standby state, the only accepted input is from the feature start button. When the player operates the start button (step S13), the game machine 1 starts the feature game and a feature game start phase is entered (step S14). In this feature game start phase, trigger symbols will not be statically displayed again, so the trigger symbols on the reels are all replaced with diamond symbols. The number of remaining feature games is displayed on the screen. On the sub-screen 8, reels that reproduce those on the main screen 7 are displayed with all symbols other than the diamond symbol displayed as blanks. On the main screen 7, the reels are spun and the symbols are displayed in a changing manner, while on the sub-screen 8, the operations performed on the main screen 7 are reproduced and spinning reels are displayed (step S15). The reels are then stopped, the symbols are statically displayed on both screens, and feature game results are displayed (step S16).

Next, an evaluation is made as to whether there is a normal win or not (step S17). If there is no normal win, control proceeds to step S19. If there is a normal win, a normal win payout is made (step S18). For example, payout can be made if multiple display regions statically displaying at least one type of symbol are adjacent to each other (separated by a polygonal side).

As a result, even with games taking place directly on the display module, the nature of "adjacent" positions with at least one type of symbol can be varied, thus further increasing the player's interest. Also, the player is more easily able to recognize arrangements of multiple display regions in which at least one type of symbol is statically displayed. This increases the player's interest in the game, where wins are based on symbol positions.

Next, an evaluation is made to determine if the diamond symbol 81, serving as the bonus symbol, is statically displayed (step S19). While a symbol rendering a "diamond" is used as the predetermined symbol, it would also be possible to use multiple types of predetermined symbols having different appearances. This prevents the player from being bored and further increases the

player's interest.

If the diamond symbol 81 serving as the bonus symbol does not appear, control proceeds to step S21 shown in Fig. 6. If the diamond symbol 81 is statically displayed, then the statically displayed diamond symbol 81 is also displayed and recorded at a dependent display region having a corresponding position on the sub-screen 8 (step S20). If, in a series of feature games, a diamond symbol is statically displayed at a position where it is already displayed on the sub-screen, the diamond symbol continues to be displayed on the sub-screen. Fig. 11 shows this embodiment where the position history of the diamond symbols 81 that have been statically displayed on the main screen are displayed in the display regions 70 - 78.

Thus, in addition to wins established directly from a single game, there can also be wins established based on a history of positions at which the diamond symbol is statically displayed. This makes the player more interested. Additionally, the player's interest in each individual game is increased as well. The game play is improved for each game, further increasing the player's interest. Also, the clear display of the diamond symbol position history allows the player to be constantly aware of the position history of the diamond symbols displayed in the display module, thus allowing the game state to be easily understood. The player is able to easily focus on display regions that can lead to wins, and the player tends to anticipate the diamond symbol statically displayed there. In this manner, the display on the dependent display module can further interest the player.

Next, in Fig. 6, the number of remaining turns (from the changing display of symbols to the static display) in the feature game is determined (step 21). If there are any remaining turns, control proceeds to step S15, so that the reels are spun and the symbols are again displayed in a changing manner in the main screen 7 and the sub-screen 8. If there are no remaining turns in the feature game, an evaluation is made to determine if there is a win or not based on whether the diamond

symbols accumulated on the sub-screen form a fixed arrangement (step S22). In this embodiment, a win is established if multiple polygonal dependent display regions indicating the diamond symbol position history are adjacent to each other, separated by one of the sides of the polygon.

Using dependent display regions shaped as polygons results in different ways that positions can be adjacent in the diamond symbol position history, thus increasing the player's interest. Also, the arrangement of the dependent display regions displaying the diamond symbol position history can be easily recognized by the player, further increasing the player's interest in the game based on the diamond symbol position history. Also, the player can more easily recognize states that can be advantageous to the player, resulting in increased interest in the game, where wins are based on the diamond symbol position history.

It would also be possible to have wins in the feature game established when there is a combination of different types of predetermined symbols forming a fixed arrangement. As a result, the feature game can be made more varied and the player's interest can be increased.

If there is a win at step S22, the payout coin count is calculated, and this payout value is added to a BONUS WON meter 82 (step S23). As a result, this game based on the position history has a high degree of importance for the player, resulting in increased interest and anticipation of the player for the game based on the position history.

In this case, different payout values can be assigned depending on the number of connected dependent display regions displaying the diamond symbol position history. For example, 10 coins can be awarded if there are 3 connected regions, 20 coins can be awarded if there are 4 connected regions, and the like. This increases the player's interest further. While this embodiment provides payouts, other things that are advantageous to the player can be provided, e.g., an increase in the win rate for the normal game. At step S23, the total for the BONUS WON meter 82 is added to a WON meter 65, exit processing for the feature game is performed (step S24), and control

proceeds to the standby state at step S25 shown in Fig. 4.

At step S11 shown in Fig. 4, if there is no feature win, the normal game is exited and standby state is activated (step S25).

When at least one normal game has been played and the game idle state is active, the player can operate the start button (step S26) so that the stored coin count in the WON meter 65 is added to the credits 66 (step S27) and the next game is started (step S28). If, in the game idle state at step S25, the player operates the TAKE WIN button (step S29), the stored coin count of the WON meter 65 is added to the credits 66 (step S30), and the game idle state is entered (step S31). If, in the game idle state at step S25, the player operates the settle accounts button (step S32), the stored coin count of the WON meter 65 is added to the credits 66 (step S33), a coin is paid back for each credit (step S34), and the game idle state is entered (step S35).

If, in the game idle state in step S25, the player operates the double-up button (step S36), a double-up game standby state is entered, as shown in Fig. 7 (step S37). In this standby state, a display prompts the player to select whether the player wants to try a double-up game and checks whether a double-up game selection has been made by the player (step S38). If the player does not try the double-up game, the player operates the TAKE WIN button (step S39). The game machine 1 adds the stored coin count of the WON meter to the credits (step S40), and enters the game idle state (step S41).

If, in step S38, a double-up game is played, the player selects a game from multiple double-up games, e.g., BLACK OR RED, and operates a selection button (step S42). Then, the game machine 1 determines if there is a win (step S43). If there is no win, an evaluation is made as to whether there are any remaining credits (step S44). If there are no remaining credits, the game idle state is entered (step S45). Otherwise, the game idle state is entered (step S48). If there is a win in the evaluation at step S43, the number of wins is determined (step S46). If the number of

wins is four or less, control returns to step S38. If the number of wins is five, the stored coin count

of the WON meter is added to the credits (step S47), and the game idle state is entered (step S48).

With a game machine according to this embodiment as described above, the main screen

display history is used on the sub-screen to increase the player's interest and anticipation. This

allows the player's anticipation regarding the feature game to be increased.

EMBODIMENT OF FIG. 12

In the embodiment described above, a one-to-one correspondence is used between the main

screen 7 and the sub-screen 8. Another embodiment of the present invention uses a system that

displays the diamond symbol position history in a feature game on a shared sub-screen 100, serving

as a shared display module, by way of a network.

Fig. 12 shows a system architecture with the shared sub-screen 100 shared as a sub-screen by

multiple game devices SL_1 - SL_n used by multiple players P_1 - P_n, with a network allowing the

sending and receiving of data between these elements. As shown in Fig. 12, these game machines

SL_1 - SL_n are connected to the shared sub-screen 100 by way of a network cable 98 and a

management device 99. The game machines SL_1 - SL_n read their respective diamond symbol

position histories and output them to the management device 99. The management device 99

records and manages the received game machine data.

If, for example, in this embodiment, the game machine SL_1 of a player P_1 enters a feature

game, and a diamond symbol is displayed on the main screen of the game machine SL_1 as a result of

the feature game, the position history thereof is displayed on the shared sub-screen 100. If the

position history of diamond symbols does not form a fixed relationship and no win occurs, the

position history is left displayed on the shared sub-screen 100. If another player P_2 subsequently

plays a feature game and the diamond symbols on the shared sub-screen 100 form a fixed

relationship, resulting in a win, the player P₂ obtains the full payout value from the win. Thus, the payout is a "jackpot"-style payout. Once there is a win, the position history on the shared sub-screen 100 is reset.

With the game machine according to this embodiment as described above, the use of a network makes it possible to obtain a payout based on a position history left behind by another player, thus increasing the player's interest and anticipation. Also, the players playing at the different game machines can recognize on the shared sub-screen the accumulated diamond symbol position history, the anticipation of the players for the next feature game is increased.

The characteristic operations of the present invention such as those described above are performed by having a computer execute a control program. More specifically, this control program is a game program for controlling a game machine including a display module containing multiple display regions and, when a game starts, displaying in a changing manner multiple types of symbols that were displayed in a static state in the display regions, and then again providing a static display of the symbols in the display regions. The present invention is formed so that it is computer-readable and can allow a computer in which the game program is loaded to execute a series of operations including: a changing display operation to display the multiple types of symbols that were statically displayed in the display regions so that they continuously change into different symbols; a static display operation restoring the symbols being displayed in a changing manner in the display regions to static displays; an information recording operation recording position information of the display region on the display module where a predetermined symbol is statically displayed each time the predetermined symbol is statically displayed during a repetition of static and changing displays; and an evaluation operation evaluating whether a position history based on the recorded position information forms a fixed relationship.

As described above, if the predetermined symbol is statically displayed, the position

information of the display region where the predetermined symbol is statically displayed is recorded. This recording of position information is accumulated by repeating the changing and static displaying of symbols. Then, an evaluation is made to determine if the accumulated position history of the predetermined history based on the recorded position information forms a fixed relationship. More specifically, it is possible to provide two interrelated games: a game where wins are established from position information directly determined from the changing and static display of symbols; and a game where a series of changing and statically displaying of symbols is performed and wins are established based on the accumulated position history of the predetermined symbols.

As a result, the player can be interested not only in direct wins established by a single changing/static display of symbols, but also in wins established by a position history for the predetermined symbol recorded over a series of operations. Furthermore, the interest of the player is increased in a synergistic manner regarding each individual changing/static display of symbols. For example, the player focuses on a fixed display region at which a win based on the position history is established if a static display of the predetermined symbol in the next static display is located at that fixed display region, and the player anticipates the static display of the predetermined symbol at that position. As a result, the game play for each game is heightened and the player's interest is increased.

Also, the game program of the present invention can further include the following operation to be executed by the computer: a dependent display operation displaying the position history of the predetermined symbol based on the recorded position information in multiple dependent display regions of a dependent display module disposed at a position different from the display module, with the dependent display regions being arranged with a one-to-one association with the display regions.

In a game machine that includes, as described above, a dependent display module having

dependent display regions arranged with a one-to-one correspondence with the display regions in the display module, the predetermined symbol position history based on recorded position information is displayed in the dependent display regions so that there is correspondence with the display regions at which the predetermined symbols are statically displayed.

With this program, the position history of the predetermined symbol is displayed clearly, and the program can be continuously aware of the position history of the predetermined symbol displayed on the display module. For example, it is easy for the player to focus on the particular display region at which a win based on the position history is established when the predetermined symbol is statically displayed in the particular display region during the next static display, and the player tends to anticipate the static display of the predetermined symbol at that position. Thus, the player's interest is further increased by the display on the dependent display module.

The program described above can be obtained in the form of a recording on a recording medium such as a CD-ROM or DVD. Also, this type of program can be obtained by receiving signals sent from a computer, serving as a transmission device, by way of a transmission medium forming a network such as a communication network formed from public phone lines, dedicated phone lines, cable TV lines, wireless communication lines, or the like. These signals are computer data signals that implement a predetermined carrier wave containing a program. During this transmission the entirety of the data making up the program does not need to be present in the transmission medium at one time. Also, the transmission of the program from the computer can include continuous transmission of data making up the program as well as intermittent transmission.

ADVANTAGES OF THE INVENTION

As described above, the game machine of the present invention includes a display module with multiple display regions, the display module providing, at the start of a game, a changing

display in which multiple types of symbols are continuously changing into other symbols, and a static display in which the symbols being displayed in a changing manner are again displayed in the display regions in a static state. The game machine also includes: a recording module recording display module position information for display regions at which a predetermined symbol is statically displayed each time the predetermined symbol is statically displayed in one of the display regions in the display module during repeated changing and static display operations; and an evaluation module evaluating whether a position history of the predetermined symbol based on the recorded position information forms a fixed relationship.

In the present invention as described above, when the predetermined symbol is statically displayed, the position information of the display region at which the predetermined symbol is statically displayed is recorded. The recording of the position information is accumulated through the repetition of changing and static display of symbols. Then, the predetermined symbol position history accumulated based on the recording of the position information is checked to see if there is a fixed relationship. More specifically, it is possible to provide two interrelated games: a game where wins are established from position information directly determined from the changing and static display of symbols; and a game where a series of changing and statically displaying of symbols is performed and wins are established based on the accumulated position history of the predetermined symbols.

As a result, the player can be interested not only in direct wins established by a single changing/static display of symbols, but also in wins established by a position history for the predetermined symbol recorded over a series of operations. Furthermore, the interest of the player is increased in a synergistic manner regarding each individual changing/static display of symbols. For example, the player focuses on the fixed display region at which a win, based on the position history, is established in the next static display by a static display of the predetermined symbol at the

fixed display region, and the player anticipates the static display of the predetermined symbol at that position. As a result, the game play for each game is heightened and the player's interest is increased.